

On Compounds of Luteo Phosphotungstic Acid With  
Urea and Glycocoll

SOV/79-29-2-3/71

of organic bases, amino acids and other compounds, and has been partially specified in the present paper (Ref 2). The purpose of the work under review was the synthesis of the compounds of the l.f.w. acid with urea and glycocoll, which have hitherto been unknown. The analogous compound phosphotungstic acid is not easily soluble in water and separates if the urea concentration in the solution exceeds the 2 % limit (Ref 3). As is known, urea yields salts with strong acids upon the reaction with an equivalent of acid. Well-known are its difficultly soluble salts of the formula  $\text{CO}(\text{NH}_2)_2 \cdot \text{HNO}_3 \cdot 2\text{CO}(\text{NH}_2)_2 \cdot \text{H}_2\text{C}_2\text{O}_4$  etc., which are decomposed by water (Ref 4) according to certain indications. Salts of the l.f.w. acid were thus synthesized with urea. On the basis of investigation results, these salts must be considered as products of the affiliation of urea to the l.f.w. acid. The crystalline salts of this acid were obtained with glycocoll. On the basis of the acid properties of the compounds obtained, the salts of glycocoll can be observed to form thanks to its alkaline properties. In the case of highly substituted salts

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of glycocoll, the glycocoll molecules are partially polymerized on the expense of the hydrogen bonds. There are 9 figures, 5 tables, and 11 references, 5 of which are Soviet.

ASSOCIATION: 2-y Moskovskiy meditsinskiy institut (Moscow Second Medical Institute)

SUBMITTED: January 13, 1958

Card 3/3

KONYSHEV, V. A., Cand Med Sci -- (diss) "Inclusion of series-35 methionine in the proteins of the brain in ischemia caused by a perstrictive braid." Moscow, 1960. 16 pp; (Second Moscow State Medical Inst im N. I. Pirogov); 250 copies; free; (KL, 18-60, 156)

KONYSHEV, V.A.

Incorporation of  $S^{35}$  methionine into the tissues, proteins, and lipoids of rabbit brains during the application of a tourniquet to the extremities. Uch.sap. 2-go MGMI 17:167-176 '58.

(MIRA 13:7)

(BLOOD--CIRCULATION, DISORDERS OF)  
(METHIONINE) (BRAIN)

KONYSHV, V.A.

Incorporation of  $S^{35}$  methionine into the proteins of rabbit  
brains following the removal of a tourniquet from the extremities.  
Uch.zap. 2-go MGMI 17:187-198 '58. (MIRA 13:7)  
(BLOOD--CIRCULATION, DISORDERS OF) (METHIONINE)  
(BRAIN) (PROTEIN METABOLISM)

KONYSEV, V.A.

Incorporation of  $S^{35}$  methionine into the proteins of rabbit brains following the action on the extremities of a discontinuously applied tourniquet. Uch.zap. 2-go MOMI 17:199-204 '58.

(MIRA 13:7)

(BLOOD--CIRCULATION, DISORDERS OF) (METHIONINE)  
(BRAIN) (PROTEIN METABOLISM)

KUSHKO, V.M.; MALAKHOV, N.Ye.; KONYSEV, V.A.

Comparative data on the effect on the organism of the intermittent and continuous action of a hemostatic tourniquet. Khirurgiia 36 no.9:115-118 S '60. (MIRA 13:11)

1. Iz kafedry biokhimii (zav. -- prof. B.M. Kushko) II Moskovskogo gosudarstvennogo meditsinskogo instituta imeni N.I. Pirogova.  
(ANEMIA) (LEG--BLOOD SUPPLY)

KUSHKO, V.M.; KONY SHEV, V.A.

Protein renewal in the brain and some other organs of rats during the action of a hemostatic tourniquet on the limb and during the state of shock caused by its removal. Ukr. biokhim. zhur. 33 no.2: 201-207 '61. (MIRA 14:4)

1. Kafedra biokhimii 2-go Moskovskogo meditsinskogo instituta.  
(PROTEIN METABOLISM) (BLOOD—CIRCULATION, DISORDERS OF)



I 23094-66 EWT(1)/EWT(m)/EWP(t)/EWA(h) LIP(c) ID/WW/CG

ACC NR: AP3007031

UR/0057/66/036/002/0316/0323

AUTHOR: Butuzov, S.S.; Konyayev, V.P.; Maslennikov, Ye.A.; Pustovoyt, Yu.M.

ORG: None

TITLE: Achievement of ultrahigh vacuum in the Ogra-1 installation

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 2, 1966, 316-323

TOPIC TAGS: ultrahigh vacuum, high vacuum technique, vacuum chamber, titanium, sorption, magnetic mirror machine

21. 44. 55 21. 44. 55

ABSTRACT: In this paper there are discussed in detail the problems encountered in attempting to achieve ultrahigh vacuum in the Ogra-1 magnetic mirror system. When the machine was constructed in 1958 the pumping system consisted of four banks of mercury vapor pumps with a pumping rate of 2500 liter/sec and a limiting vacuum of  $3 \times 10^{-7}$  mm Hg and type SIN-20-5 ion sorption pumps with a pumping rate of 7000 liter/sec. In addition, titanium was deposited directly on the wall of the chamber at the rate of 0.5 g/min from each of three evaporators. Only three-quarters of the inner surface of the chamber could be heated to 400°C for outgassing. Under these conditions a vacuum better than  $3 \times 10^{-8}$  mm Hg was never achieved. In 1960 there were introduced four liquid nitrogen cooled titanium sorption pumps. These consisted of hollow copper cylinders with a total area of about 20 m<sup>2</sup> cooled by liquid nitrogen flowing in copper tubes soldered to the outer walls, on the inner surfaces of which titanium was deposit-

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UDC: 533.9

L 23094-66

ACC NR: AP6007081

ed at the rate of 0.1 g/min by each of six evaporators. The total hydrogen pumping rate was approximately  $4 \times 10^6$  liter/sec. In 1962 there was installed a liner that could be electrically heated to  $400^\circ\text{C}$ . A vacuum of  $10^{-6}$  mm Hg was maintained outside the liner, and leakage through the liner corresponded to flow through a total open area of  $4 \text{ cm}^2$ . The liquid nitrogen cooled titanium pumps must be supplemented by high speed diffusion pumps to remove those components of the residual gas (mainly argon) that are not adsorbed by the titanium. A vacuum of  $10^{-10}$  mm Hg was achieved with this system in the absence of ion injection and the presence of a lithium arc of the type developed in the laboratory of V.A.Simonov. It is concluded that it is possible to achieve ultrahigh vacuum in a large system with many joints, but that the problem of maintaining a vacuum of  $10^{-10}$  mm Hg in the Ogra-1 machine cannot be regarded as satisfactorily solved. The authors thank I.N.Golovin and V.A.Simonov for discussions and valuable advice, and their coworkers for participating in the experiments. Orig. art. has: 5 figures.

SUB CODE: 13

SUBM DATE: 31May65/

ORIG REF: 008/

OTH REF: 001

UUR  
Cord 2/2

BOLDYREV, V.V.; PINAYEVSKAYA, E.N.; BOLDYREVA, A.V.; ZAKHAROV, Yu.A.;  
KONYSHEV, V.P.

Effect of preliminary irradiation and chemical treatment on the  
thermal decomposition rate of silver permanganate. Kin. i kat. 2  
no.2:184-187 Mr-Apr '61. (MIRA 14:6)

1. Tomskiy politekhnicheskii institut imeni S. M. Kirova.  
(Silver permanganate)

BOLDYREV, V.V.; PINAYEVSKAYA, E.N.; BOLDYREVA, A.V.; ZAKHAROV, Yu.A.;  
KONY SHEV, V.P.

Effect of preliminary irradiation and chemical treatment on the  
thermal decomposition rate of silver permanganate. Kin. i kat.2  
no.2:184-187 Mr-Ap '61. (MIRA 14:6)

1. Tomskiy politekhnicheskii institut imeni S. M. Kirova.  
(Silver permanganate)

L 61119-65 BWT(1)/SCC GW

ATTENTION NR: 185017066

UR/0236/65/000/012/0091/0092

Author: Lakhtinov, A. I.; Kazas, V. I.; Kozyshev, Yu. I.

TITLE: Apparatus for measuring the concentration and sizes of cloud droplets.  
Class 42, No. 172094

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 12, 1965, 91-92

TOPIC TAGS: cloud, drop measurement, measuring instrument

ABSTRACT: This Author Certificate presents an apparatus for measuring the concentration and sizes of cloud droplets with diameters on the order of 20-150 mk. The casing of the apparatus contains a light source, a slit, an objective with its central portion covered by a diaphragm, and a cartridge for gathering light scattered by the droplets onto a photoelectron multiplier (see Fig. 1 on the Enclosure). To diminish the distortions in measurements in the oncoming stream, the cylindrical part of the casing is provided with an intake tube oriented upstream. The length of the tube exceeds by a factor of, say, 5 the diameter of the central part of the apparatus casing, but does not exceed the distance at which the settling of droplets on the surface of the intake tube commences. The diameter of the tube is much larger (say, by a factor of 20;

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L 61419-65

ACCESSION NR: AP5019066

2

than the maximum diameter of the measured droplets. Orig. art. has: 1 diagram.

ASSOCIATION: Institut prikladnoy geofiziki glavnogo upravleniya gidrometsluzhby  
Sov. SSSR (Institute of Applied Geophysics of the Main Administration of  
Hydro-Meteorological Service of the USSR)

SUBMITTED: 04Jul64

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ENCL: 01

SUB CODE: ES

OTHER: 000

L 61419-65

ACCESSION NR: AP5019066

ENCLOSURE: 01

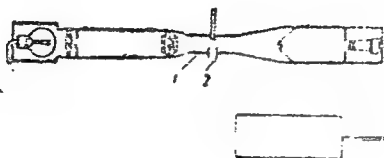


Fig. 1.

1- central cylindrical part of the casing; 2- intake tube

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KAZAS, V.I.; KONY SHEV, Yu.V.; LAKTIONOV, A.G.

A continuous aircraft device for measuring the size and concentration of large droplets in clouds. Izv. AN SSSR. Fiz. atm. i okeana 1 no.11:1212-1215 N '65.

(MIRA 18:12)

1. Institut prikladnoy geofiziki AN SSSR, Moskva. Submitted April 28, 1965.



L 07214-67 EWT(1) GN

ACC NR: AP6024432

SOURCE CODE: UR/0362/66/002/007/0766/0769

AUTHOR: Konyshev, Yu. V.; Laktionov, A. G.

ORG: Institute of Applied Geophysics (Institut prikladnoy geofiziki)

TITLE: Airborne photoelectric device for measuring cloud drops

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 2, no. 7, 1966, 766-769

TOPIC TAGS: photoelectric detection equipment, measuring instrument, cloud physics

ABSTRACT: This article describes a new airborne photoelectric cloud-drop measuring device which is based on a photoelectric nephelometer. The optical system of this device has an incandescent lamp which illuminates a diaphragm with a square hole. In front of the diaphragm is a lens which projects the image of the filament onto the inlet of the objective lens. The objective projects a slit into the vicinity of the point of intersection of the optical axes of the condenser and microscope objective. The light scattered by the drops investigated is focused with a 3.7-fold magnification onto the plane of a diaphragm with a square opening by means of the microscope objective situated at an angle of 90° to the axis of the condenser. The light passing through the opening in the diaphragm strikes a photomultiplier. The electrical impulse from the photomultiplier passes through an emitter follower and broad-band amplifier to a multichannel electronic recorder. The instrument described permits meas-

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UDC: 551.508.765

L 07214-67

ACC NR: AP6024432

uring drops with a diameter greater than or equal to  $25 \mu$ . At a flight speed of 70 m/sec the instrument can measure in one sec the drops in  $500 \text{ cm}^3$  of cloud. This volume marks the minimal concentration of drops at which the instrument can give statistically reliable results. Orig. art. has: 4 formulas and 2 figures.

SUB CODE: 14,04/ SUBM DATE: 10Jan66/ ORIG REF: 005

Card

2/2

*llh*

SOV/28-58-6-15/34

AUTHORS: Yasnopol'skiy, V.D., Murzina, N.S., Konysheva, A.S.,  
Engineers

TITLE: The Determination of Iodine Numbers of Liquid Fuel  
(Opredeleniye yodnykh chisel zhidkogo topliva)

PERIODICAL: Standartizatsiya, 1958, <sup>12</sup>Nr 6, pp 55-57 (USSR)

ABSTRACT: The content of unsaturated hydrocarbons in liquid fuel is determined by iodine number, which expresses the number of grams of iodine bound by 100 grams of the tested product. The iodine is hydrolyzed, and then the hypoidous acid unites with the hydrocarbon. The iodine added must exceed the quantity, chemically necessary, by 93-95%. Experiments have shown that the quantity of the sample tested, influences the iodine number. In a sample of 0.4 g, the iodine number was 50-60, in samples of 0.2 g 70-80. The quantity of the iodine solution determines also the iodine number (Table 1), which increases quickly and then more

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The Determination of Iodine Numbers of Liquid Fuel

slowly. The influence of the iodine excess is shown in table 2. It is recommended to keep all accompanying circumstances constant during measurements and to relate the iodine number to 100 ml of the tested substance, not to 100 g. This method saves time and reduces the consumption of alcohol. There are 3 tables.

ASSOCIATION: Azerbaydzhanskiy nauchno-issledovatel'skiy institut neftepererabatyvayushchey promyshlennosti (Azerbaydzhani Scientific Research Institute of the Oil Refining Industry)

Card 2/2

23602

S/081/61/000/008/013/017

B110/B203

11.1210

AUTHORS: Yasnopol'skiy, V. D., Dolnakova, I. E., Konyasheva, A. S.

TITLE: The problem of determining the composition of the hydrocarbon group of bright fuels boiling higher than gasoline

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 8, 1961, 488, abstract 8M258 (8M258) (Azerb. khim. zh., 1960, no. 3, 99-106)

TEXT: In the analysis of synthetic mixtures of de-aromatized diesel fuel with naphthalene (I), the picrate method gives satisfactory results at a content of I  $\geq 1\%$ . A solvent mixture of ethylene glycol-methanol was used for determining the aromatic hydrocarbons by the method of selective solubility. At the ratio of 3:1, alkyl benzenes with 5-10 C atoms in the chain, and alkyl-substituted I as well as polycyclic aromatics with unbound phenyl radicals are separated out quantitatively. Sulfonation and, then, extraction by means of the mixture mentioned were conducted for determining the aromatic hydrocarbons. The analysis of the bright fuels with a boiling point higher than that of gasoline is made for determining the n- and iso-paraffins by the carbamide method. [Abstracter's note: Complete translation.]

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YASNOPOL'SKIY, V.D.; DOLNAKOVA, I.E.; KONY SHEVA, A.S.

Determination of the group hydrocarbon composition of clear  
fuels boiling above benzene. Azerb.khim.zhur. no.3:99-106

'60.

(MIRA 14:8)

(Hydrocarbons)

(Petroleum as fuel)

65

KONYSHEVA, N.M.

Spectral determination of rhenium in products of nonferrous  
metallurgy. Sbor. nauch. trud. Gintsvetmeta no. 19:689-693  
'62. (MIRA 16:7)

(Rhenium--Spectra)  
(Nonferrous metals--Spectra)

L 52126-65 EPF(c)/EWP(j)/EWT(m)/T Pc-4/Pr-4 RM

ACCESSION NR: AP5015285

UR/0236/65/000/009/0066/0066

AUTHORS: Skrylova, L. V.; Belyayeva, V. Ye.; Konysheva, P. S.

TITLE: A method for obtaining low-molecular epoxy resins. Class 39, No. 170657

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 9, 1965, 66

TOPIC TAGS: epoxy, resin, diphenol, epichlorohydrin, organic solvent

ABSTRACT: This Author Certificate presents a method for obtaining low-molecular epoxy resins by heating diphenol A with epichlorohydrin while continually and gradually adding a base, and simultaneously and continually distilling off the azeotropic mixture of epichlorohydrin with water. This procedure is followed by separating the resin from the excess of epichlorohydrin by distilling the latter and the produced salt by precipitation, while dissolving the resin in an organic acid. To increase the yield of resin and lower the epichlorohydrin consumption, a dry base is first introduced in an amount smaller than 2 mole (say, 1.85 mole) per 2 mole of diphenol. Next, after separating of the obtained resin from the excess of epichlorohydrin and salt, the solution of resin in an organic acid is treated with an aqueous base.

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L 52126-65

ACCESSION NR: AP5015285

ASSOCIATION: none

SUBMITTED: 23May63

ENCL: 00

SUB CODE: 00, M T

NO REF SOV: 000

OTHER: 000

Ctd. 2/27/68

AUTHOR: Konysheva, T. Engineer 29-4-17/20

TITLE: Laureate of Competition (Laureat konkursa)

PERIODICAL: Tekhnika Molodezhi, 1958, . . . Nr 4, pp. 31-31 (USSR)

ABSTRACT: It often happens in operational practice that a proposal of rationalization is of great economic effect. Yet there is not much to be said to the proposal itself, since it was so simple. This was also the case with the polisher Nina Kuzina of the 2nd Watch-Manufactory in Moscow. She polished rings of casings for many years. The casing was heavy and therefore it was possible to polish only one single ring at a time. Working in this way was tiresome and annoying because of the small output. Nina had the idea of simplifying this device. She took a steel shaft by means of which she could polish 21 casing rings simultaneously. This simple solution made it possible to accelerate the operation and to remove bottlenecks in production. Nina's invention was awarded the title of a Laureate of the Competition, a diploma and 2000 Rubel on the occasion of the competition of the best proposal of rationalization, arranged by the central committee of the VLKSM, last year.

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Laureate of Competition

29-4-17/20

There is 1 figure.

AVAILABLE: Library of Congress

1. Watches-Manufacture 2. Polishing-Equipment

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SOV/29-58-8-15/23

AUTHOR: Konysheva, T., Engineer  
 TITLE: Shoemakers of Kimry (Kimrskiye obuvshchiki)  
 PERIODICAL: Tekhnika molodezhi, 1958, Nr 8, pp. 24-25 (USSR)

ABSTRACT:

In this article the authoress tells of the measures of rationalization introduced by the shoe factory "Red Star" in the town of Kimry. Here the leather seems to grow as a result of being handled by the able fingers of the workers, because an annual saving of 98 980 decimeters of leather was attained. This means that 9 958 more pairs of shoes could be produced. The leather increases in size already when it is still on the drawing board on which the cutter designs patterns for good-looking, comfortable, and leather-saving shoes. By a minor change of the shape of the shoes carried out by Shokin it was possible to increase the surface of the leather to such an extent that the factory was able to manufacture an additional quantity of 26739 pairs of children's shoes. Also a cutter's skill contributes largely towards saving leather. This kind of work requires a high amount of skill. Thus, the best cutter of this factory, the 20 years old Rimma Subotina, has learned her profession to perfection. She cuts leather so economically that

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Shoemakers of Kimra

SOV/29-58-8-15/23

it is possible to manufacture 2855 pairs of children's shoes per annum in excess of the figures planned for one year from the 8,5% of saved leather. Besides, she calculated her work so accurately, that her daily quantity is never less than 135% of what is planned. Also mechanics can contribute towards saving material. Thus, the head of the technical department, Engineer-Mechanic V. Ye. Lisunov, constructed a double sewing stand, by means of which it is possible to produce a double seam. Also a new method of putting the leather on trees saves 1 096 200 cm<sup>2</sup> of leather per annum. This will result in an increase of production figures by 107 000 pairs of shoes per annum. In this way a small collective of young people under the supervision of Chief Engineer R. F. Fedorova works for a saving of material and a reduction of prime costs. Durable, inexpensive, and smart. (Prochno, deshevo, elegantno). Chemistry can do it better! Shoes made of synthetic leather cost only one third the amount one has to pay for real leather shoes. It is true that, at first, they did not give full satisfaction. Originally a material was used for tops which was produced from felt waste material covered with a thin coating of synthetic rubber. This material was inexpensive and was a good imitation

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Shoemakers of Kimry

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of real leather. However, it did not wear well, as it was impermeable to air and the foot could not "breathe". Gradually, a procedure was developed for making the leather porous. The microporous sole made of synthetic leather is called "osobaya" (special). It was developed by the collaborators of the All-Union Scientific Research Institute for Synthetic Leather Production under the supervision of B. A. Safray, Candidate of Technical Sciences. Its specific weight is 0,1-02 g as against 1,0 g of natural leather. This sole is widely used in production. There are 4 figures.

1. Shoes--Production
2. Personnel--Performance
3. Leather--Preparation

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KONYSHEVA, T.

in the school and in the field. IUn.tekh. 3 no.9:1-5 S '58.

(MIRA 11:10)

(Agriculture--Study and teaching)

AUTHOR: Konysheva, T. SOV/29-59-2-27/41

TITLE: "Sovremennik" (Contemporary)

PERIODICAL: Tekhnika molodezhi, 1959, Nr 2, pp 30-31 (USSR)

ABSTRACT: Some data from the history of the antique and medieval Armenia have been published here in form of a newspaper. The editors of the periodical "Tekhnika - molodezhi" write in this connection: Two years ago, the "Lyuboznaykin" (Inquisitive), who is very well known to our readers, "found" the archives of the newspaper "Sovremennik" which is said to have been published at all times of human history, and made a number of cuttings available. This time, these communications characterize, up to a certain degree, the level of material civilization, the technology of the past in one of the republics of our country. Further details on the subject of "Sovremennik" can be found by the reader in the reading matter indicated in the column "What Should Be Read".

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KONYSHEVA, T.

Underground artificial rain. IUn. tekhn. 4 no.10:36-38 0 '59.  
(MIRA 13:1)

(Irrigation)

KONYSHEVA, T.

Climbing press. IUn.tekh. 4 no.3:28-29 Mr '60.  
(Hoisting machinery) (MIRA 13:6)

KONYsheva, T.

Peat-manure balls. IUn.tekh. 4 no.4:46-48 Ap '60. (MIRA13:9)  
(Fertilisers and manures)

KONYsheva, T.

In the world of books and periodicals ("Man saw everything"  
by S. Morozov. Reviewed by T. Konyshova.) Tekh.mol. 28 no.2:  
33 '60. (MIRA 13:6)

(Photography—Scientific application)

(Morozov, S.)

KONYSHEVA, T.

Outstanding blue diploma holders. IUn.tekh. 6 no.4:12-18 Ap '62.  
(MIRA 15:6)  
(Technological innovations--Societies, etc.)

VEYNIK, A.I., prof., red.; KONTSEVAYA, T.V., red.; KUZ'MENOK, P.T.,  
tekhred.

[Heat exchanges in founding] Problemy teploobmena pri lit'e.  
Pod red. A.I.Veinika. Minsk, Redaktsionno-izd.otdel BPI im.  
I.V.Stalina, 1960. 228 p. (MIRA 14:3)

1. Minsk. Belorusskiy politekhnicheskiy institut. 2. Chlen-  
korrespondent AN BSSR (for Veynik).  
(Founding) (Heat--Transmission)

*KONYSKOVA, T. Ye.*  
GVBESIANI, G.G.; KONYSKOVA, T. Ye.; CHIZHIKOV, D.M.

Kinetics of the carbon monoxide reduction of copper oxide.  
Izv. AN SSSR. Otd. tekhn. nauk no. 8:140-144 Ag '55. (MLA 9:1)

(Copper oxide) (Carbon monoxide) (Reduction, Chemical)

Konyshkova, T. Ye.

137-1958-3-4876

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 60 (USSR)

AUTHORS: Gvelesiani, G. G., Chizhikov, D. M., Konyshkova, T. Ye.

TITLE: The Effect of Temperature on the Kinetics of the Reduction of Cupric Oxide by Carbon Monoxide (Vliyaniye temperatury na kinetiku vosstanovleniya okisi medi okis'yu ugleroda)

PERIODICAL: Tr. In-ta metallurgii AN SSSR, 1957, Nr 2, pp 47-53

ABSTRACT: Results are described of experiments carried out in order to determine the effect of temperature on the kinetics of the reduction of CuO by CO. The experiments were performed in a vacuum system equipped with automatic pressure regulation of the continuously circulating reducing agent (CO) and capable of recording the progress of the reduction reaction by means of continuous weighings performed on electromagnetic scales. CuO was subjected to reduction under the following conditions: CO pressure: 50, 100, 300, and 450 mm Hg; temperature: 150°, 175°, 200°, 225°, 300°, 400°, 500°, 600°, 700°, and 800°. A temperature increase up to 300°, at a constant pressure of the reducing agent, increases the speed of the reduction reaction of CuO; any further increase in temperature has virtually no

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137-1958-3-4876

The Effect of Temperature on the Kinetics of the Reduction (cont.)

effect on the speed of the reaction. X-ray analysis of partially reduced CuO shows that the reaction progresses in stages and is accompanied by the formation of Cu<sub>2</sub>O.

A. P.

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SOV/24-58-8-4/37  
AUTHORS: Gvelesiani, G. G., Konyshkova, T. Ye, Tsvetkov, Yu.V. and  
Chizhikov, D. M. (Moscow)

TITLE: On the Theory of Reduction of Oxides of Heavy Non-Ferrous  
Metals and their Mixtures with Carbon Monoxide (K teorii  
vosstanovleniya okislov tyazhelykh tsvetnykh metallov i  
ikh smesey okis'yu ugleroda)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh  
Nauk, 1958, Nr 8, pp 19-25 (USSR)

ABSTRACT: The author deals with certain problems of the kinetics  
and the mechanism of reduction of oxides of copper, lead  
and zinc and of mixtures of these oxides with carbon  
monoxide. The kinetics of reduction of these oxides were  
investigated under conditions in which these oxides were  
in the solid state and the reduced metals were in the  
solid (Cu), the liquid (Pb) and the gaseous (Zn) states.  
The adsorption-catalytic theory of G. N. Chufarov (Ref.7),  
which is based on investigations of the kinetics of  
reduction of oxides of iron and of some other oxides under  
such conditions that the product of reduction is obtained  
in the solid phase, is the most satisfactory from the point  
Card 1/5 of view of explaining up-to-date conceptions of the

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On the Theory of Reduction of Oxides of Heavy Non-Ferrous Metals  
and their Mixtures with Carbon Monoxide

mechanism of reduction of oxides with gases. The influence of the aggregate state of a product on the development of the process of reduction with the progress of time has not been considered by Chufarov. Since lead, zinc and copper accompany each other in metallurgical processes, it is of considerable importance to establish the kinetics governing their simultaneous reduction. At present for studying the kinetics of reduction processes the most widely used method is that of determining the reaction speed from the decrease of the pressure of the reducing gas during the reduction process. However, this method has the drawback that it does not give information on the real change of the progress of the process with time since the pressure of the reducing gas changes continuously during the reduction process. The error is particularly pronounced at relatively low pressures when the quantity of the reducing gas is inadequate even for the complete reduction of a specimen of the studied oxide or compound. The experimental technique (see Ref.1) used by the authors

Card 2/5 of this paper enabled eliminating these drawbacks. The

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On the Theory of Reduction of Oxides of Heavy Non-Ferrous Metals  
and their Mixtures with Carbon Monoxide

kinetics of reduction were studied whilst maintaining a constant pressure of the reducing gas by utilising the automatic recording of the loss in weight of the specimen. In the first part of the paper the authors discuss the results of separate reduction of the oxides of copper, lead and zinc with carbon monoxide, graphed in Figs.1-7. In the second part the reduction of mixtures of oxides of copper, zinc and lead by means of carbon monoxide, graphed in Figs.8 and 9, are discussed. The authors summarise their results thus: the speed of reduction of CuO at temperatures up to 200°C is characterised by the autocatalytic progress of the kinetic curve; reduction of oxides of lead and zinc begins with the maximum speed in the temperature range 450 to 800°C for PbO and 700 to 1000°C for ZnO. The speed of reduction of CuO and PbO increases with increasing CO pressure in the pressure range 25-100 mm Hg col. for CuO and 50-300 mm Hg col. for PbO. The dependence of the reaction speed on the pressure complies with the isotherm adsorption type equation  $v = k_p^n$ , where  $n < 1$ ; for zinc oxide no such relation has been detected. Depending on the

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On the Theory of Reduction of Oxides of Heavy Non-Ferrous Metals  
and their Mixtures with Carbon Monoxide

activity of the oxides being reduced, this relation was observed also in other temperature ranges and pressures. In the system  $\text{CuO-PbO}$ ,  $\text{CuO-ZnO}$  and  $\text{PbO-ZnO}$  no chemical compounds were detected; the thermograph analysis of these systems has revealed the presence of a eutectic, with a fusion point of  $688^{\circ}\text{C}$ , in the system  $\text{CuO-PbO}$  for a molar ratio  $\text{CuO/PbO} = 1:1$ . In the case of reducing  $\text{CuO-PbO}$  mixtures, the  $\text{CuO}$  increases somewhat the speed of reduction of the  $\text{PbO}$  and this may be due to a local over-heating of its particles; above  $700^{\circ}\text{C}$  the reducing reaction is braked owing to formation of a liquid phase. In the system  $\text{PbO-ZnO}$  a braking of the reduction of the  $\text{ZnO}$  is observed in the temperature range  $600$  to  $700^{\circ}\text{C}$  due to intensive reduction of the  $\text{PbO}$  and an increase in the  $\text{CO}_2$  concentration resulting therefrom which influences the adsorption properties and also the thermodynamics of reduction. Presence of slight quantities of  $\text{CuO}$  in  $\text{CuO-ZnO}$  mixtures, up to the molar ratio  $\text{CuO/ZnO} = 0.5:1$ , has practically no

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SOV/180-59-1-9/29

AUTHORS: Gvelesiani, G.G., Konyshkova, T.Ye. and Chizhikov, D.M.  
(Tbilisi and Moscow)

TITLE: Kinetics and Mechanism of the Reduction of Zinc Ferrites  
with Carbon Monoxide (Kinetika i mekhanizm vosstanovleniya  
ferrita tsinka okis'yu ugleroda)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye tekhnicheskikh  
nauk, Metallurgiya i toplivo, 1959, Nr 1, pp 50-54 (USSR)

ABSTRACT: The authors describe their studies of the kinetics of the  
reaction of zinc ferrite (27.1% Zn and 46.8% Fe) free  
from uncombined oxides with carbon monoxide at 800-1000°C  
and 10-450 mm Hg. These conditions secured the complete  
removal of gaseous reduction products: the percentage  
reductions of the zinc and iron of the ferrite were found  
from the total loss in weight of the charge, the amount  
of deposited carbon and the amount of zinc oxide  
remaining in the charge. It was found that on increasing  
the temperature from 800 to 1000°C the rate of reduction  
of the ferrite increases, the increase being greatest at  
the lowest (10 mm Hg) pressure. Fig 1 shows percentage  
reduction as functions of time (min) for 1000, 900 and  
800°C at 10 mm Hg (curves 1, 2 and 3 respectively) and at  
450 mm Hg (curves 1', 2' and 3' respectively).

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SOV/180-59-1-9/29

Kinetics and Mechanism of the Reduction of Zinc Ferrites  
with Carbon Monoxide

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000824420014-6

Fig 2 shows the curves for pressures of 450, 250, 50 and  
10 mm Hg at 800°C (curves 1, 2, 3 and 4 respectively)  
and at 1000°C (curves 1', 2', 3' and 4' respectively).  
Increase in pressure beyond 250 mm Hg produced little  
effect on reduction rates except in the early stages  
(where the effect of pressure was always most pronounced).  
Results were also obtained for the reduction of zinc in  
the ferrite (Fig 3) and for zinc and iron in the ferrite  
(Figs 4,5). Figs 6 and 7 show reduction curves for zinc  
ferrite, for a mechanical mixture of the oxides in  
stoichiometric proportions and also for zinc oxide  
reduction in ferrite in a mechanical mixture and in the  
free state. The results obtained from the reduction  
experiments and from X-ray phase analysis of zinc-ferrite  
reduction products (Table) show that the first stage is  
the decomposition with reduction of the ferrite into zinc  
oxide and magnetite; after this the process can continue  
with the reduction of either component predominating,  
depending on the gas temperature and pressure. The  
observed sequence of reduction rates of free zinc oxide

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SOV/180-59-1-9/29

Kinetics and Mechanism of the Reduction of Zinc Ferrites with Carbon Monoxide

and zinc in mechanical mixtures and in ferrites is consistent, the authors consider, with the reduction-hindering effect of the carbon dioxide produced in the reduction of iron oxide.

Card 3/3 There are 7 figures, 1 table and 12 references, 6 of which are Soviet, 3 German, 2 English and 1 French.

SUBMITTED: June 7, 1958.

CHIZHIKOV, D. M.  
APPROVED FOR RELEASE, 06/19/2000

CIA-RDP86-00513R000824420014

Kinetics of lead ferrite reduction by carbon monoxide.  
Dokl. AN SSSR 142 no.6:1346-1349 F '62. (MIRA 15:2)

1. Institut metallurgii im. A.A Baykova AN SSSR. 2. Chlen-korrespondent AN SSSR (for Chizhikov).  
(Lead ferrate)  
(Carbon monoxide)

KONYUCHENKO, T. I.

U S S R .

Investigation of hepatic functions in pulmonary tuberculosis. T. I. Konyuchenko (Leningrad Sanit-Hyg. Med. Inst. ~~Sanit-Hyg. Med. Inst.~~ No. 12, 17, 18, 1954).  
Of 50 cases of moderate disease limited to the lungs of pulmonary tuberculosis, 10 had normal liver functions, in 10 some of the functions were impaired. The most often impaired function was that of detoxification. Decreased total serum proteins affecting usually both albumin and globulin fractions, and disturbed carbohydrate metabolism were often found in patients with severe intoxication. The first function to show a return to normal when the clinical picture improved was that of protein synthesis. A. S. Markin.

- E. S. Markin

KONTUCHENKO, T.I.

Coprologic study of intestinal tuberculosis. Vrach.delo  
no.12:1317 D '56. (MIRA 12:10)

1. Klinika tuberkuleza (sav. - prof.Ye.Ye.Klionskiy) Leningrad-  
skogo sanitarno-gigiyenicheskogo meditsinskogo instituta.  
(~~INTESTINES~~--TUBERCULOSIS) (~~FECES~~--ANALYSIS)



KONYUCHENKO, T.I.

Ascorbic acid content of the blood of pulmonary tuberculosis patients treated with antibiotics. Trudy ISGMI 50:204-210 '58(MIRA 12:1)

1. Klinika tuberkuleza (zav. - prof. Ye. Ye. Klionskiy) Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

(VITAMIN C, in blood

in pulm. tuberc. patients, eff. of admin. of antibiotics (Rus))

(TUBERCULOSIS, PULMONARY, blood in

vitamin C levels, eff. of admin. of antibiotics (Rus))

(ANTIBIOTICS, effects

on blood vitamin C Levels in pulm. tuberc. patients (Rus))

Y. K. KANOV, P. N.; KONYUCHENKO, S. I.

Disability caused by tuberculous in Leningrad. Izv. IGMI  
72:84-91 1963. (MIRA 17:4)

1. Klinika legchnogo tuberkulioza Leningradskogo onkologicheskogo meditsinskogo instituta.

FRIDMAN, O.A.; LAPITSKIY, V.A. [Lapyts'kyi, V.A.]; ZADONTSEV, B.G. [Začontsev, B.H.]; KONYUCHENKO, V.S.

Large machinery parts made from glass plastics. Khim.prom. [Ukr.]  
no.2:60-62 Ap-Je '65. (MIRA 18:6)

KONYUCHENKO, V.S., inzh.; PATAMAN, A.P., inzh.; FRIDMAN, O.A., inzh.

New method of connecting rubberized fabric pressure hoses.  
Ugol' Ukr. 9 no.12:18-19 D '65. (MIRA 19:1)

1. Ukrainskiy nauchno-issledovatel'skiy institut plasticheskikh  
mass.

KONYUCHOVA, A.; TARATUTA, K.

"Preparation of the 1954-1955 Yearly List of Technical Personnel from the  
Russion." p. 52, (ODZIEZ, Vol. 5, No. 3, Mar. 1954. Lodz, Poland.)

SO: Monthly List of East European Accessions, (EEAL), LC,  
Vol. 3, No. 12, Dec. 1954, Uncl.

KONYUK, A. A.

Konyuk, A. A. "Structures of "horse tails" in tectonics of the western part of Zeravshansk mountain range," Trudy Novocherkas. politekhn. in-ta im. Ordzhonikidze, Vol. XVII, 1948, p. 45-52

SO: U-3264, 10 April 1953, (Letopis 'Zhurnal 'nykh Statey, no. 3, 1949)

KONYUK, A.A.

Textural and mineralogical characteristics of Kumshtag granites.  
Trudy Inst. geol. KirFAN SSSR no.2:17-29 '51. (MIRA 11:6)  
(Kumshtag Valley--Granite)

KONYUK, A.A.

Biotite from melanocratic granites of the Talas Ala-Tau. Trudy Inst.  
geol. KirFAN no.4:23-30 '53. (MIRA 11:3)  
(Talas Ala-Tau--Granite)

KONYUK, A.A.

Manifestations of sodium metasomatism in pegmatites of the Talas  
Ala-Tau. Trudy Inst. geol. KirFAN no. 4:39-45 '53. (MIRA 11:3)  
(Talas Ala-Tau--Pegmatites)



KONYUK, A.A.

New faunal finds in Kunyshtag limestones. Trudy Inst. geol. KirFAN  
no.4:57-58 '53. (MIRA 11:3)  
(Kunyshtag Valley--Paleontology, Stratigraphic)

KONYUK, A.A.

Galenite in marcasitic concretions from Lyngar coal deposits.  
Trudy Inst.geol.AN Kir.SSR no.6:225-231 '55. (MLRA 10:2)  
(Lyngar--Galena)

KONYUK, A.A.; TUROVSKIY, S.D.

Morphology and material composition of granitoid massifs of northern  
Kirghizia. Trudy Inst.geol.AN Kir.SSR no.7:3-25 '56. (MLRA 10:2)  
(Kirghizistan--Rocks, Igneous)

KONYUK, A.A.

Alkali basic and ultrabasic rocks of the Talas Ala-Tau. Trudy Inst.  
geol. AN Kir. SSR no. 7:27-35 '56. (MLRA 10:2)  
(Talas Ala-Tau--Rocks, Igneous)

KONYUK, A.A.; KOKAREV, G.N.

Stratigraphy and age of ancient series of the Kirghiz Range.  
Trudy Inst.geol.AN Kir.SSR no.8:39-48 '56. (MLRA 10:2)  
(Kirghiz Range--Geology, Stratigraphic)

KONYUK, A.A.

Methods for studying intrusions in regions of the development of  
ancient strata. Trudy Inst.geol.AN Kir.SSR no.8:49-56 '56.

(Geology, Stratigraphic)

(MLRA 20:2)

(Rocks, Igneous)

KONTYUK, AA  
LUYK, A.A.; KONTYUK, A.A.

Age and characteristics of the development of the Permian effusive  
series in northern Kirghizia. Trudy Inst. geol. AN Kir. SSR no.9:59-68  
'57. (MIRA 11:4)

(Kirghizistan--Geology, Stratigraphic)  
(Rocks, Igneous)

KONYUK, A.A.

Chemistry of micas from Talas intrusive rocks. Trudy Inst. geol.  
AN Kir. SSR no.9:85-94 '57. (MIRA 11:4)  
(Talas Valley--Mica)



KONYUK, A.A.

Polarity phenomena in the development of granitoid intrusions.  
Izv. AN Kir. SSR. Ser. est. 1 tekhn. nauk 2 no. 9:49-56 '60.  
(MIRA 14:7)  
(Tien Shan—Rocks, Igneous)

KONYUK, A.A.

Some characteristics of the development of contact zones of granitoid intrusives in the northwestern Tien Shan. Izv.AN Kir.SSR. Ser.est. i tekhnauk 2 no.6:81-97 '60. (MIRA 15:5)

(Tien Shan--Rocks, Igneous)

KONYUK, A.A.

Relationship between the phase development of intrusions and  
assimilation. Mat.po geol.Tian'-Shania no.2:101-110 '62.  
(MIRA 15:11)  
(Petrology)

KOROLEV, V.G., otv. red.; ADYSHEV, M.M., akademik, glav. red.;  
BAYBULATOV, E.B., red.; BURYKHYN, I.V., akademik, red.;  
GRIGORENKO, P.G., red.; DAVLETOV, I.D., red.; KONYUK, A.A.,  
red.; POPOV, V.M., akademik, red.; SURGAY, V.T., red.

[Materials on the geology of ore deposits in the Tien Shan]  
Materialy po geologii rudnykh mestorozhdenii Tian-Shania.  
Frunze, Izd-vo "Ilim," 1964. 140 p. (MIRA 17:8)

1. Akademiya nauk Kirgizskoy SSR, Frunze. Institut geologii.
2. Akademiya nauk Kirgizskoy SSR (for Adyshev, Popov).
3. Institut geologii AN Kirgizskoy SSR (for all).

ADYSHEV, M.M., akademik, glav. red.; KOROLEV, V.G., zam. glav.  
red.; BAYEULATOV, E.B., red. BURYKHIN, I.V., red.;  
GRIGORENKO, P.G., red.; DAVLETOV, I.D., red.; KONYUK,  
A.A., red.; POPOV, V.M., akademik, red.; SURGAY, V.T.,  
red.

[Tectonics of the western regions of the northern Tien  
Shan] Tektonika zapadnykh raionov Severnogo Tian'-Shania.  
Frunze, "Ilim," 1964. 143 p. (MIRA 17:8)

1. Akademiya nauk Kirgizskoy SSR Frunze. Institut geologii.
2. Akademiya nauk Kirgizskoy SSR (for Adyshev, Popov).

KONYUK, M.M.; TERMINASOV, Yu.S.

Changes in the textured state of duralumin under alternating loading.  
Izv. AN Kir. SSR. Ser. est. i tekhn. nauk 1 no.3:77-79 '59.  
(MIRA 14:9)

(Duralumin--Fatigue) (X-ray crystallography)

1ST AND 2ND CROSS																										3RD AND 4TH CROSS																									
PROCESS AND PROPERTIES INDEX																																																			
<p>Two stage absorption refrigeration for synthetic rubber factories. V. K. Krashevskii and G. D. Konyukh. <i>Gummi i Kautchuk</i> (U. S. S. R.) 1960, No. 3, 42-4. - A description is given of a proposed 2-stage absorption ammonia refrigeration system which operates by the heat of condensation of the contact gases in synthetic rubber factories. A flow sheet is included. B. Z. Kamich</p>																																																			
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			
<p>100% DIVISION</p>																																																			

KONYUK, M.M.

Use of the method of harmonic analysis in determining the size of mosaic blocks and microdislocations in 40X steel in fatigue tests. Izv. AN Kir. SSR. Ser. est. 1 tekhn. nauk 5 no.6:111-117 '63.

X-ray diffraction study of the mechanism of fatigue in alloyed steel surface-hardened by grinding. Ibid.:119-123

Changes in the fine crystalline structure of annealed alloyed steel under alternating strain. Ibid.:149-157  
(MIRA 17:5)



ACC NR: AP6035029

(A)

SOURCE CODE: UR/0121/66/000/009/0010/0014

AUTHORS: Tuller, A. G.; Konyukh, A. I.

ORG: none

TITLE: Analysis of the operational reliability of automatic lines

SOURCE: Stanki 1 instrument, no. 9, 1966, 10-14

TOPIC TAGS: voltmeter, reliability, probability, statistics, automatic machine, chi square distribution / N370 voltmeter

ABSTRACT: Problems of determining the quantitative characteristics of the reliability of automatic lines are examined. The duration of trouble-free operation and the recovery of lost work capacity of lines can be determined more accurately when the statistical data are entered by recording voltmeters (see Fig. 1). The average time between adjacent failures:

$$T = \frac{\sum_{i=1}^n x_i}{n} = \frac{t_{\Sigma}}{n}$$

where  $t_{\Sigma}$  is the total cycle time during the inspection. The average recovery time:

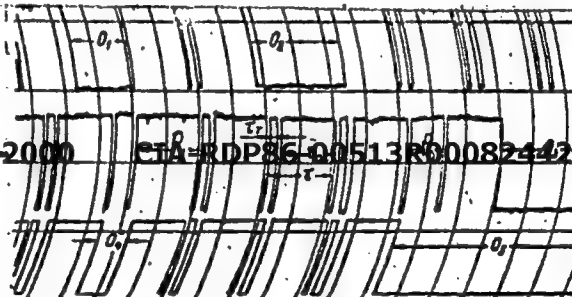
$$T_r = \frac{\sum_{i=1}^n y_i}{n} = \frac{t_r}{n}$$

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UDC: 621.9:658.527.011.56:62-19.001.5

line taken directly from recording voltmeter:  $\tau$  - duration of line cycle;  $\tau_a$  - duration of cycle of power attachments;  $\tau_r$  - duration of conveyor

cycle; ~~APPROVED FOR RELEASE: 06/19/2000~~ ~~CIA-RDP86-00513R000824420014~~  
tions of line cycle



where  $t_r$  is the total recovery time during the inspection. Formulas are given for the coefficient of specific losses, which characterizes the specific reliability introduced by various components of the line, and for the utilization factor, which is numerically equal to the probability of finding the line in the working state. Approximate confidence limits are calculated. Orig. art. has: 15 formulas, 3 graphs, and 3 tables.

SUB CODE: 14, 13/ SUBM DATE: none/ ORIG REF: 002

Card 2/2

DOSYCHEV, A.V.; LOPATIN, S.A.; MYASNIKOV, L.M.; PLEKHANOV, N.A.; KONYUKH, G.D.

Redesigning of the electric power supply network for carbide furnaces.  
Prom.energ. 16 no.5:15-16 My '61. (MIRA 14:7)  
(Electric furnaces)

KONYUKH, I.B.; VINOGRADOV, G.V.

Study of high-pressure polyethylene and polyisobutylene on a rotary  
elastoviscometer. Plast. massy no.2:60-64 '65. (MIRA 18:7)

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28937

S/063/61/006/004/004/010  
A057/A129

AUTHORS: Vinogradov, G. V., Doctor of Chemical Sciences, Belkin, I. M.,  
Konyukh, I. V.

TITLE: Method for studying rheological (viscous) properties of polymer  
solutions and melts

PERIODICAL: Zhurnal vsesoyuznogo khimicheskogo obshchestva imeni D. I. Mendele-  
yeva, v. 6, no. 4, 1961, 417-421

TEXT: A short review of methods for studying rheological properties of  
polymers by investigating viscosity characteristics of solutions or melts is  
given in the present paper. After discussing principal aspects for these  
methods, capillary and rotational viscosimetry is described. Some new testing  
methods and devices developed in the Institut neftekhimicheskogo sinteza AN SSSR  
(Institute of Petrochemical Synthesis of the Academy of Sciences USSR) are also  
presented. Viscosity  $\eta$  is expressed by Newton's equation as  $\tau = \eta D$  (1)  
( $\tau$  = shear stress,  $D$  = rate gradient). Rheological characteristics of fluid  
systems were determined by the form of the fluidity curve  $\tau = f(D)$  and the  
values of the parameters. In non-Newtonian liquids  $\eta$  depends on  $D$  and  $\tau$ , thus

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S/063/61/006/004/004/010  
A057/A129

Method for studying rheological ...

by determining the latter the viscosity can be estimated by means of absolute viscosimeters. Two types of viscosimeters were generally used, viz., capillary and rotational viscosimeters. The latter are especially convenient for great  $D$  values. Capillary viscosimeters operate in the range of  $D = 10^{-2} - 10^6$  sec, and  $\eta = 10 - 10^7$  dyne/cm<sup>2</sup>. To avoid "outlet effects", devices with two capillaries of different length but equal diameter were used. Constant pressure is secured by a weight pressing on a piston which floats on the polymer system. Compressed gas or extruders can also be used to effect the pressure. In the Institute of Petrochemical Synthesis a load-type microviscosimeter (Fig. 1) is used for polymer melts, a gas viscosimeter with constant pressure for melts and concentrated solutions of polymers, and a spring viscosimeter with variable consumption and pressure for solutions [AKB-2a (AKV-2a) type] and melts [AKB-5 (AKV-5) type]. A device identical to the viscosimeter in Fig. 1 was developed by I. A. Marakhonov in the NIIPPlastmass (Leningrad). Small amounts of the polymer can be investigated in this microviscosimeter. The gas capillary viscosimeter contains several cylindrical removable reservoirs of different volume with floating pistons. The latter are connected to the manometric panel at one end, and at the other to the pressure regulator, manostat and cylinder with inert gas at 150 atm pressure. Also a set of calibrated cylindrical

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A057/A129

Method for studying rheological ...

capillaries of different length and diameter is used with the viscosimeter. All the three types of viscosimeters mentioned can be used up to 350°C. Rotational viscosimeters can be used in the determination of relaxation and elastic characteristics of polymer systems for studying the Weissenberg effect or the estimation of the transitions from elastic deformations to fluidity. On these devices the intervals of  $D = 10^{-8}$  to  $10^5$  sec and  $\eta = 10^{-4}$  to  $10^7$  dyne/cm<sup>2</sup> can be measured. Generally devices with coaxial cylinders were used. Many modern rotational viscosimeters have electronic mechanisms for registration and regulation or programmed changes of  $D$ . A viscosimeter of the cone-plane type (Fig. 2) was developed in the Institute of Petrochemical Synthesis for investigations of concentrated solutions or melts of polymers in inert gas atmosphere or high vacuum at temperatures of up to 300°C. One friction surface is the bottom of the rotating cup 4 and the other the plane of the cone 3. The rotation of the latter, effected by the polymer 5, is controlled by tensiometric or inductive gages. By means of a servo mechanism (which controls the hydraulic drive 10) changes in the rate of rotation of the cup 4 can be programmed. By a quick stop of the latter the relaxation of stresses can be determined. Some typical curves obtained with high-pressure polyethylene at 220°C are shown in Fig. 3. Curves OAB demonstrate the dependence of the shear stress on deformation (diagrams 1-4;

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Method for studying rheological ...

deformation rates 0.75, 2.1, 2.8 and 21  $\text{sec}^{-1}$ , respectively). Curves BC show the process of shear stress relaxation at a momentary stop of deformation in points B. On the flow curve (left upper corner in Fig. 3) the points 1-4 are shown corresponding to the stop on the "stress-deformation" curves. Investigations of concentrated polymer solutions at temperatures below 100° - 120°C are carried out by the present authors on viscosimeters with coaxial cylinders of the type BP-1 (PVR-1) described by V. P. Pavlov [Ref. 21: Trudy tret'ey Vses. konf. po kolloidnoy khimii (Transactions of the third All-Union conference on colloid chemistry), Izd. AN SSSR, M., 1956, p. 144], and Yu. F. Deynaga, V. P. Pavlov and G. V. Vinogradov [Ref. 44: Zav. lab., 26, no. 3, 353 (1960)]. There are 3 figures and 45 references: 13 Soviet-bloc and 32 non-Soviet-bloc.

ASSOCIATION: [Abstractor's note: apparently the Institute of Petrochemical Synthesis is the author's institute.]

Card 4/8

VINOGRADOV, G.V., doktor khimicheskikh nauk; BELKIN, I.M.; KONYUKH, I.V.

Methods for studying the rheological (viscosity) properties of  
polymer solutions and melts. Zhur.VKHO 6 no.4:417-421 '61.

(Polymers)

(Rheology)

(MIRA 14:7)



KONSTANTINOV, A.A., KONYUKH, I.V.

Automatic capillary viscosimeter AKB-5

Report presented at the 13th Conference on high-molecular compounds  
Moscow, 8-11 Oct 62

KONYUKH, I.V., BELKIN, I.M., MUSTAFAYEV, E.

Rotation viscosimetry of polymer melts.

Report presented at the 13th Conference on high molecular compounds  
Moscow, 8-11 Oct 62

ZABUGINA, M.P., KONYUKH, I.V., KONSTANTINOV, A.A.

Capillary microviscosimeter for polymer melts.

Report presented at the 13th Conference on high-molecular compounds  
Moscow, 8-11 Oct 62

KONYUKH, I.V.; VINOGRADOV, G.V.; KONSTANTINOV, A.A.

Rheology of polymers; microviscosimeter for polymer melts. Plast.  
massy no.10:45-49 '63. (MIRA 16:10)

VINOGRADOV, G.V.; BELKIN, I.M.; KONSTANTINOV, A.A.; KRASHENINNIKOV, S.K.;  
ROGOV, B.A.; MALKIN, A.Ya.; KONYUKH, I.V.

Rotating elasto-viscosimeters for the testing of polymeric  
systems. Zav.lab. 30 no.3:364-367 '64. (MIRA 17:4)

1. Institut neftekhimicheskogo sinteza AN SSSR.

VINOGRADOV, G.V.; ZABUGINA, M.P.; KONSTANTINOV, A.A.; KONYUKH, I.V.; MALKIN, A.Ya.; PROZOROVSKAYA, N.V.

Viscosity measurements of polymers in the condensed state by rotatory and capillary instruments. Vysokom.soed. 6 no.9:1646-1650 S '64.  
(MIRA 17:10)

1. Institut neftekhimicheskogo sinteza AN SSSR.

L 51495-65 EPP(c)/EWP(j)/EWT(m)/T Pc-4/Pr-4 RM

ACCESSION NR: AP5016495

UR/0191/64/000/011/0031/0034

AUTHOR: Faynshteyn, R. M.; Korytova, Ye. A.; Konyukh, I. V.; Vinogradov, G. V. 26

TITLE: Rheology of polymers. Influence of the fractional composition of high-pressure polyethylene on the viscosity properties of the melt 6

SOURCE: Plasticheskiye massy, no. 11, 1964, 31-34

TOPIC TAGS: polymer, polyethylene plastic, solid mechanical property

ABSTRACT: A comparison of the flow curves of three samples of high-pressure polyethylene indicated that the viscosity properties are practically not influenced by the nature of the initiator, and the apparatus of the process also exerts comparatively little influence. The deciding factor for the viscosity properties of the polyethylene melts was found to be the molecular weight; with increasing molecular weight, the effective viscosity, compared at constant shearing stress or rate of shear, increases, and the viscosity anomaly is more sharply manifested. Polydispersion affects chiefly the effective viscosity, which increases as the molecular weight distribution is

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L 51495-65

ACCESSION NR: AP5016495

narrowed. In a first approximation, the dependence of the logarithm of the effective viscosity on the composition of binary mixtures of polyethylenes is expressed by a straight line, which provides the possibility for a tentative calculation of the viscosities of mixtures of polyethylenes. In addition, the viscosity curves can aid in plasticizing high-molecular weight, difficultly reprocessed polyethylenes to a given viscosity, using small additions of a low-molecular component.

Orig. art. has: 2 tables, 5 graphs.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: MT

NO REF SOV: 002

OTHER: 011

JPRS

CI.

Card 2/2 *mb*



L 24148-65 EPF(c)/EWP(j)/EWT(m)/T Pc-4/Pr-4 RM  
ACCESSION NR: AP5002185

S/0032/65/031/001/0123/0124

25  
24  
B

AUTHORS: Konyukh, I. V.; Zabugina, M. P.; Vinogradov, G. V.

TITLE: Dilatometer for polymers

SOURCE: Zavodskaya laboratoriya, v. 31, no. 1, 1965, 123-124

TOPIC TAGS: dilatometer, polymer property, polyethylene, polypropylene,  
polystyrene

ABSTRACT: A simpler dilatometer representing a modification of a capillary microviscosimeter was developed. It permits measurements at temperatures between below 0C and 300C, using  $\leq 1$  g of polymer and requiring 4 to 6 hours for determining the density-temperature relationship. The working assembly consisting of a cylinder (1) (see Fig. 1 on the Enclosures), piston (2), and clamping nut (3) is made of invar. The sample (4) is placed between the piston and nut, and the change in volume is measured with an indicator (5). The heater is powered by a transformer (7), and is regulated by a thermostat (8) connected to a thermocouple (9). A potentiometer and thermocouple are used for temperature measurements. The density as a function of temperature was measured for several polymers and is shown in Fig. 2 on the Enclosures. It was found that the data were

Card 1/4

L 24148-65

ACCESSION NR: AP5002185

reproducible with an accuracy of 98%. Orig. art. has: 2 figures.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk, SSSR (Institute  
of Petrochemical Synthesis, Academy of Sciences, SSSR)

SUBMITTED: 00

ENCL: 02

SUB CODE: MT

NO REF SOV: 001

OTHER: 000

Card 2/4

L 63629-65 EWT(m)/EPF(c)/EMP(j)/T RM

ACCESSION NR: AP5020225

UR/0069/65/027/004/0540/0545  
541.18:532.5

AUTHORS: Kuleznev, V. N.; Konyukh, I. V.; Vinogradov, G. V.; Dmitriyeva, I. P.

TITLE: Rheology of binary polymer mixtures

SOURCE: Kolloidnyy zhurnal, v. 27, no. 4, 1965, 540-545

TOPIC TAGS: viscosity, viscous flow, polyethylene, polypropylene, polymer

ABSTRACT: The work was undertaken to extend the data of V. N. Kuleznev, A. G. Shvarts, V. D. Klykova, and B. A. Dogadkin, (Koloidn. zh. 27, 211, 1965) on the behavior of binary polymeric mixtures. The stress-strain behavior of isotactic polypropylene (I) with low (II) and medium (III) pressure polyethylene was investigated. The experiments were carried out at 190C in the presence of 0.5% 1,1'-thio-bis-(2 methyl-4-oxy-5-tert-butylbenzene) stabilizer. The experimental results are summarized in Fig. 1 and Fig. 2 on the Enclosure. An equation for the viscosity of binary polymeric mixtures is

$$\eta_{mix} = (\omega_1 \eta_1^{1/a} + \omega_2 \eta_2^{1/a})^a$$

where  $\omega$  and  $\eta$  are the weight fraction and viscosity of the pure component

Card 1/4

L 63829-65

ACCESSION NR: AP5020225

respectively, and  $\alpha$  is a constant equal to 4.2 for I, II, and III. For the region of mutual polymer solubility, a reinforcement of the polyethylene melt by small amounts of polypropylene has been observed. It is concluded that the polymer mixtures are described by the universal temperature invariant viscosity parameter of the individual linear polymers. Orig. art. has: 3 graphs and 1 equation.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute for Fine Chemical Technology) Institut neftekhimicheskogo sinteza AN SSSR im. A. V. Topchiyeva (Institute for Petro-chemical Synthesis, AN SSSR)

RECEIVED: 29Dec64

ENCL: 02

SUB CODE: GC

NO REF SOV: 011

OTHER: 003

Card 2/2

L 63329-65

ACCESSION NR: AP5020225

ENCLOSURE: 01

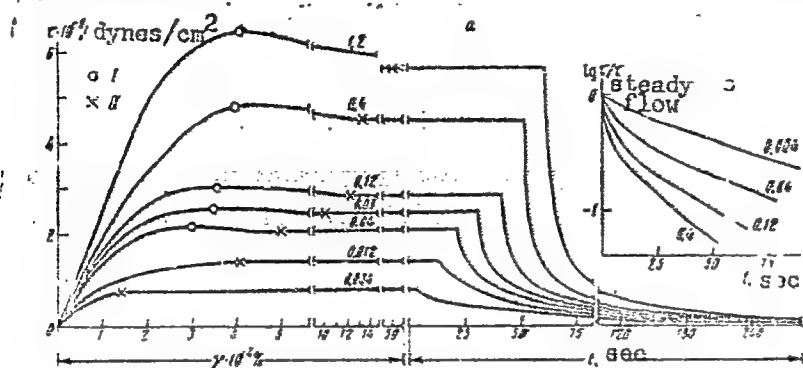


Fig. 1.

Typical dependence of shear stress  $\tau$  on the deformation  $\gamma$  (a) and stress relaxation in stress-time coordinates (a), and  $\log \tau / \tau_{\text{steady fl.}}$  - time (b). Mixture of I:III 50:50, numbers on curves - velocity of deformation  $\dot{\gamma}$ , sec<sup>-1</sup>. I - curve maxima, II - beginning of steady flow

Card 3/4

L 63829-65

ACCESSION NR: AP5020225

ENCLOSURE: 02 0

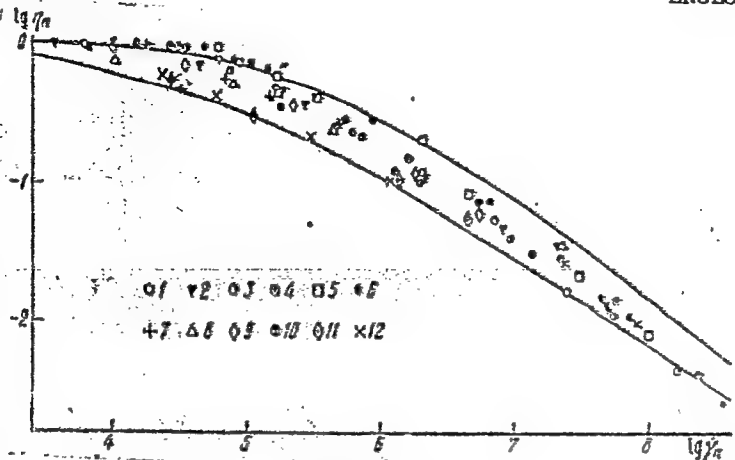


Fig. 2.

Universal temperature invariant viscosity parameter of polymeric mixtures. Mixtures III:I - 0:100 (1), 10:90 (2), 50:50 (3), 70:30 (4), 90:10 (5), 100:0 (6). Mixtures II:I - 10:90 (7), 50:50 (8), 85:15 (9), 90:10 (10), 95:5 (11), 100:0 (12)

Card 4/4

KONYUKH, V.Ya.; KARP, I.N.

Burners for the combustion of cold high-calorific gas in open-hearth furnaces. Gaz. prom. 7 no.11:20-25 N '62.

(MIRA 17:9)

KONYUKH, V. Ya.

Effect of the design of ports on temperature conditions in open-hearth furnaces. Met. i gornorud. prom. no. 3:62-64 My-Je '63. (MIRA 17:1)

1. Institut ispol'zovaniya gaza AN UkrSSR.



PROKHORENKO, K.K.; VERKHOVTSEV, E.V.; KONYUKH, V.Ya.; MIKHAYLOV, A.S.

Slag conditions in the scrap process of steel smelting. Vop.proizv.  
stali no.8:78-87 '63. (MIRA 14:6)  
(Steel—Metallurgy) (Slag)

KONYUKH, V.Ya.

Pipe for the sampling of hot gases. Met. i gornorud. prom.  
no.1:73 Ja-F '62. (MIRA 16:6)

(Gases—Analysis)

(Sampling—Equipment and supplies)

KONYUKH, V.Ya.

Improving the cone of flame in transferring mazut-type open-hearth furnaces to firing with natural gas. Vop. proizvod. stali no.9:13-28 '63. (MIRA 16:9)

KONYUKH, V.Ya., inzh.

Effect of certain factors on the combustion process of  
liquid fuel. Met. i gornorud. prom. no.5:90-91 S-0 '63.  
(MIRA 16:11)

1. Institut ispol'zovaniya gaza AN UkrSSR.